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IS 11042-1 (1984): Binding Screws for Alpine Skis, Part 1:
General Requirements [PGD 27: Mountaineering Equipment]



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“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

SPECIFICATION FOR BINDING SCREWS FOR ALPINE SKIS

PART 1 GENERAL REQUIREMENTS

1. Scope — Specifies the dimensions, mechanical properties and fastening characteristics of screws used for mounting ski bindings to Alpine skis.

1.1 The purpose of this standard is to aid the design of a more rational and safer binding mounting system.

2. Definitions — For the purpose of this standard, the following definitions shall apply.

2.1 Ski Binding Screw — A fastener which, after mounting, ensures the connection of binding and ski by axial pretension.

2.2 Penetration Depth — The distance from the top surface of the ski to the lower extremity of the ski binding screw.

2.3 Driving Torque — The maximum value of the moment required to drive the ski binding screw into the drill hole of the ski or test specimen.

2.4 Tightening Torque — The moment, specified in the mounting instructions or in the test procedure, which is used to tighten the ski binding screw to ensure sufficient fastening.

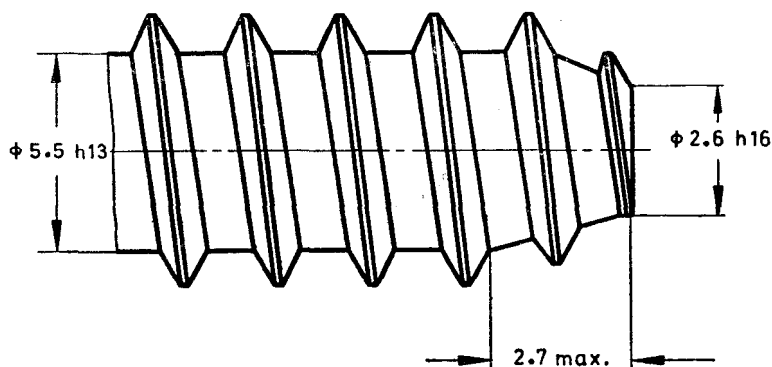
2.5 Stripping Torque — The maximum measurable moment which causes damage to the internal thread in the ski or the test specimen, or to the thread of the screw if the already tightened screw is further loaded by a driving moment.

2.6 Static Pull-out Resistance — The resistance of the ski or test specimen to a pull-out force applied quasi-statically in the axial direction.

3. Dimensions

3.1 Screw Head — Ski binding screws shall be having a maximum head diameter of 10 mm and be cross recess No. 3 with a recommended minimum penetration depth of 2.7 mm. If screws having countersunk heads are used, the angle of countersinking shall be $90 \pm 2^\circ$.

3.2 Thread and End Configuration — Within the maximum major diameter of 5.5 mm according to Fig. 1 the cross-section of the screw may be circular or non-circular.



All dimensions in millimetres.

FIG. 1 THREAD AND END CONFIGURATION

3.2.1 Irrespective of the shaft length, the thread length shall be at least 1 mm longer than the penetration depth. The tolerance on the length of the screw shall be ± 0.8 mm.

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3.3 *Shaft End* — shall correspond to Fig. 1.

4. **Materials** — Any material complying with the requirements of 5.1 and 5.2 may be used (for example, case-hardened or heat-treated steel).

5. General Requirements

5.1 *Surface* — Ski binding screws shall be coated or plated with materials which provide adequate protection against corrosion and ensure a reproducible coefficient of friction.

5.1.1 A suitable coating meeting the above requirement would be a zinc electroplated coating, having a clear chromate conversion coating and a minimum local thickness of $5\mu\text{m}$ (batch average $4\mu\text{m}$ *Min*, $7\mu\text{m}$ *Max*), when measured on the top surface of the screw head. During electroplating, adequate precautions shall be taken to avoid hydrogen embrittlement.

5.2 Strength Requirements

5.2.1 The breaking moment for ski binding screws shall be not less than 10 N.m.

5.2.2 When subjected to the ductility test screws shall not break.

5.3 *Typical Application characteristics* — The specified fastening and mounting characteristics of the screw are based on a uniform drill diameter of 4.1 H 12.

5.3.1 *Mounting characteristics* — In the test the screw shall obtain the following values without damage to the screw head :

Driving torque	3.3 N.m <i>Max</i>
Stripping torque	5 N.m <i>Min</i>

5.3.2 *Fastening characteristics* — The mean static pull out resistance shall correspond to at least that of a reference screw complying with the requirements of Type B of IS : 5957-1970 'Dimensions for screw threads for thread forming tapping screws' and having a diameter of 5.5 mm, a thread pitch of 1.81 mm and symmetrical flank angle of 60° .

6. **Designation** — Ski binding screws shall be designated by :

- the words 'Ski Binding Screws' and the abbreviation 'SBS';
- the nominal dimensions : diameter (mm) × length (mm);
- the reference to this Indian Standard; and
- the type of screw head.

Example:

Ski binding screws of nominal diameter 5.5 mm and length 12 mm, with countersunk heads would be designated as :

Ski Binding Screws SBS 5.5 × 12 IS : 11042 (Part 1) with countersunk head.

EXPLANATORY NOTE

This standard is being issued in the following two parts :

Part 1 General requirements

Part 2 Test methods

While preparing this standard assistance has been derived from ISO 6004-1981 'Alpine skis — ski binding screws requirements' issued by the International Organization for Standardization (ISO).

The use of ski binding screws complying with the requirements of this standard will improve binding mounting. By standardizing the drill hole diameter, recommendations by the manufacturers will no longer be required and mistakes and improper mounting, caused by differences in instructions, will, hence, be avoided. Additionally, standardization of the penetration depth will enable ski manufacturers to design their products such that there will be sufficient thickness in the mounting area and it will facilitate the proper location of reinforcement parts to make optimum use of the fastening characteristics.

The driving torque — stripping torque ratio, which is essentially more advantageous than that of the commonly-used tapping screws, will enable adjustable torque limiting screw-drivers to be set uniformly, therefore, reducing the danger of thread stripping. The use of the cross recess No. 3 screw also contributes significantly to a considerable simplification of the binding mounting procedure.